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By Ian Galloway

# Using Pay-For-Success To Increase Investment In The Nonmedical Determinants Of Health

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**ABSTRACT** The combination of fee-for-service payments and the US health care system's standing commitment to treating existing illness discourages spending on the behavioral, social, and environmental (that is, the nonmedical) conditions that contribute most to long-term health. Pay-for-success, alternatively known as social impact bonds, or SIBs, offers a possible solution. The pay-for-success model relies on an investor that is willing to fund a nonmedical intervention up front while bearing the risk that the intervention may fail to prevent disease in the future. Should the intervention succeed, however, the investor is repaid in full by a predetermined payer (such as a public health agency) and receives an additional return on its investment as a reward for taking on the risk. Pay-for-success pilots are being developed to reduce asthma-related emergencies among children, poor birth outcomes, and the progression of prediabetes to diabetes, among other applications. These efforts, supported by key policy reforms such as public agency data sharing and coordinated care, promise to increase the number of evidence-based nonmedical service providers and seed a new market that values health, not just health care.

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**M**any of the articles in this issue of *Health Affairs* address the behavioral, social, and environmental conditions that often prevent or promote illness. These articles contribute to a growing body of literature that calls for a renewed focus on these nonmedical determinants of health.<sup>1</sup> Unfortunately, interventions that address them—home visits, education, service-enriched housing, workforce training, healthy eating, exercise, and other nonmedical activities—often exist outside the scope of the traditional health care payment system.

This is largely the result of two related challenges: The existing payment system is designed to pay for treatment after illness has occurred, and the funding necessary to pay for proven nonmedical interventions is tied up remediating

the illnesses that the interventions could have prevented. These challenges are a major contributor to the poor health outcomes in the United States relative to the rest of the industrialized world.<sup>2</sup> Fortunately, there is a new tool—pay-for-success—that could be used to increase spending on the nonmedical determinants of health while maintaining society's commitment to treating people who are already sick.<sup>3</sup>

All pay-for-success projects, which are also known as social impact bonds, or SIBs, begin with a performance-based contract between a service provider, usually a nonprofit organization, and a payer, usually a government agency. The service provider agrees to administer a program designed to produce a future outcome that is valuable to the payer—which, in turn, commits to pay the service provider when that outcome is delivered.

Once the performance-based contract is in place, the service provider raises money from foundations, banks, and other investors that agree to supply the provider with up-front program funding. In exchange, the investor or investors receive “success payments” in the future based on projected cost savings (usually by a government agency), should the agreed-upon outcome be produced on schedule.

A fourth party, a local or national intermediary organization, facilitates the pay-for-success contract; negotiates payment and financing terms; oversees the service provider’s programming; and, in some cases, provides the programming itself.

At the conclusion of the contracted period, an independent evaluator determines—usually against a comparison group—if the expected outcome is present. Once the outcome has been verified, the payer’s success payment is disbursed to the intermediary and passed along to the investor or investors. Depending on the contract, the service provider may also receive a bonus for executing the program successfully. However, if the outcomes are not present, no success payment is disbursed, the investors lose their investment, and the service provider loses credibility as an evidence-based organization.

Only four pay-for-success projects have been launched in the United States as of this writing. The first, in New York City, was designed to reduce recidivism at Rikers Island prison. Funded by a \$9.6 million investment by Goldman Sachs, the Rikers Island SIB, as the project is known, will deliver an evidence-based behavioral therapy program to several cohorts of Rikers Island prisoners over a six-year period. If the program reduces the prisoners’ future recidivism rate by more than 10 percent, Goldman Sachs will be repaid by the City of New York and will receive a capped graduated return on its investment, depending on the extent of the reduction. If the reduction is not at least 10 percent, the City of New York will not have to repay Goldman Sachs or provide any additional rate of return.<sup>4</sup>

Since the Rikers Island SIB was launched in August 2012, pay-for-success has been used in Massachusetts to fund a workforce training and prison aversion program for at-risk young men; in New York State to fund a recidivism reduction and workforce reentry program for recently released adult prisoners; and in Salt Lake County, Utah, to fund early childhood education. If these projects are successful, their investors will recoup their original investments and receive a base annual interest rate of 0 to 10.8 percent, depending on the contract terms and degree of success achieved.<sup>5</sup>

Pay-for-success could also be used to improve

health by raising up-front private investment for nonmedical interventions. The money would be paid back, plus a rate of return, only if health measurably improved. This conditional payment arrangement would allow payers—government agencies, insurance companies, hospital systems, and other institutions that benefit from improved health—to commit funding for non-medical approaches knowing that they would not be obligated to repay investors for interventions that failed to improve health.

The first health-related pay-for-success projects are currently being negotiated in Fresno, California; South Carolina; and New York State. They will address asthma-related emergencies among children, poor birth outcomes, and the progression of prediabetes to diabetes, respectively. These efforts and others at various stages of development are profiled below.

### Children’s Asthma-Related Emergencies

More than ten million US children suffered from asthma in 2010.<sup>6</sup> Asthma is triggered by viral infections, allergies, and airborne particles and gases.<sup>7</sup> The direct medical cost of treating children’s asthma in the United States was estimated to be \$8 billion in 2006.<sup>8</sup>

Asthma attacks can be managed through a regimen of inhaled corticosteroids, leukotriene modifiers, short-acting bronchodilators, and other medications, but reducing asthma triggers is critical to reducing asthma-related emergencies.<sup>9</sup>

In Fresno, California, 20.1 percent of children have asthma, which is twice the national average.<sup>10</sup> To address the high prevalence of children’s asthma-related emergencies in Fresno, Collective Health (a health consultancy) is partnering with the California Endowment (a health foundation) and Social Finance US (a national pay-for-success intermediary) to create a pay-for-success solution that reduces asthma triggers.

The project, known as the Fresno HIB, is undergoing a feasibility study to test a range of preventive interventions, including home trigger remediation and home-based support from community health workers. The study will compare the emergency care use of two groups of children: 200 children with asthma in Fresno who receive the preventive interventions, and a similar group of 200 children who do not participate in the program.

The interventions will be designed and implemented by the Central California Asthma Collaborative (an asthma reduction advocacy group) and Clinica Sierra Vista (a community health care provider), with technical support from

# Pay-for-success could be used to improve health by raising up-front private investment for nonmedical interventions.

the Regional Asthma Management and Prevention program (a collaborative focused on reducing asthma). Individual program participant eligibility will be based on an analysis of “multi-year claims, clinical assessment, and geographic clusters” of children in Fresno who have asthma.<sup>10</sup>

Based on 2012 insurance claims data, Collective Health estimates that reducing ED use by 30 percent and hospital use by 50 percent among this target group of 200 children will cost \$545,600 and will generate hospital and ED savings of \$1.6 million over eighteen months.<sup>10</sup> If the feasibility study confirms these projections, Collective Health hopes to raise funds through the Fresno HIB to increase program participation to 3,500 children, which would generate potential health care savings of \$27 million over five years.<sup>10</sup>

Two Medi-Cal (California Medicaid) plans and several self-insured companies have been engaged as possible payers. However, the terms of the Fresno HIB cannot be negotiated until after the results of the feasibility study are known.<sup>10</sup>

## Poor Birth Outcomes

According to the Centers for Disease Control and Prevention, nearly 24,000 US infants died before their first birthday in 2011. Infant mortality is caused by a number of factors, including serious birth defects, sudden infant death syndrome, complications of pregnancy, injury, low birthweight, and preterm birth.<sup>11</sup> Two of the most effective ways to improve birth outcomes are early maternal engagement and education.<sup>12</sup> Consider, for example, Nurse-Family Partnership, a national nonprofit organization that focuses on maternal and infant health. Nurse-Family Partnership targets low-income, first-time mothers early in their pregnancies and

connects them with trained nurses to discuss prenatal health, smoking cessation, healthy eating habits, and available health care options.

The program has undergone five randomized controlled trials and meets the criteria for the **Coalition for Evidence-Based Policy's** top tier of evidence. The trials have identified meaningful reductions in prenatal cigarette smoking, hypertensive disorders of pregnancy, and closely spaced pregnancies.<sup>13</sup> Particularly among low-income mothers, these results are correlated with higher rates of normal birthweight and at-term births.<sup>14</sup>

Based largely on this evidence, the Institute for Child Success, a child research and advocacy organization, identified pay-for-success as a promising way to increase funding for the Nurse-Family Partnership in South Carolina, which is consistently among the lowest-performing states on a broad range of child outcomes.<sup>15</sup> A feasibility study by the Institute for Child Success demonstrated that \$24 million in private investment could expand the Nurse-Family Partnership to 2,750 new mothers a year (about a quarter of those eligible for the program in South Carolina), which would generate an estimated \$52 million in savings—mostly from reductions in Medicaid spending—to the federal, state, and local governments.<sup>15</sup>

South Carolina's Department of Health and Human Services is in the process of finalizing the project's terms with the support of the **Harvard Kennedy School Social Impact Bond Technical Assistance Lab, a national pay-for-success government technical assistance provider.**<sup>16</sup>

## Diabetes

In 2012 over twenty-nine million Americans suffered from diabetes, which remained the seventh-leading cause of death in that year.<sup>17</sup> In the same year, the cost of treating diabetes was \$176 billion. Nearly two-thirds of this cost was borne by the government—Medicare, Medicaid, and the military—and most of the remainder was shouldered by private insurance companies representing both corporate and individual policy holders.<sup>18</sup>

Treating patients with diabetes is a health priority. Accordingly, keeping the estimated seventy-nine million Americans over age twenty who have prediabetes from developing the disease is critical.<sup>19</sup> People with prediabetes have higher-than-normal fasting blood sugar levels and, as a result, are at high risk of developing diabetes within ten years. If current trends continue, one in three Americans will have diabetes by 2050.<sup>19</sup>

Fortunately, there are interventions, usually involving a combination of increased physical activity and diet management, that slow the progression of prediabetes.<sup>19</sup> One prominent example, the National Diabetes Prevention Program, has demonstrated significant success in reducing the progression to diabetes in overweight and obese people.

The National Diabetes Prevention Program is an evidence-based lifestyle change program led by the Centers for Disease Control and Prevention. People who participate in the program work in a group with a lifestyle coach to incorporate physical activity and healthy eating habits into their daily life. A 2002 study by the Diabetes Prevention Program Research Group found that these types of modest behavior changes helped participants with prediabetes lose 5–7 percent of their body weight and reduce their risk of developing diabetes by 58 percent, over an average period of 2.8 years.<sup>20</sup>

In New York State, a proposed collaboration by the Primary Care Development Corporation (a nonprofit organization dedicated to improving primary care for the underserved), Hudson Information Technology for Community Health (a nonprofit coalition that promotes safety-net primary care), and three federally qualified community health center networks (the Institute for Family Health, Open Door Family Medical Centers, and HRHCare Community Health) was recently selected as one of four finalists to pursue a state-sponsored pay-for-success project. If the collaboration is selected, the three clinics will raise funds from investors to provide the National Diabetes Prevention Program to approximately 3,570 patients over a five-year period, at an estimated cost of \$1,333 per person.

Assuming that the patients lose a sufficient amount of weight, success payments would be made by the State of New York based on the projected annual health care savings of \$8,600 per averted case of diabetes (Tom Manning, managing director, Primary Care Development Corporation, interview, June 10, 2014).

### Other Pay-For-Success Health Projects Being Developed

**CHILDREN'S ASTHMA-RELATED EMERGENCIES** In Alameda County, California, Impact4Health is developing a pay-for-success pilot with the county's Healthy Homes and Public Health Departments to reduce children's asthma-related emergencies. The project is targeting 200–250 children in Oakland, San Leandro, and Hayward who have visited an ED or been hospitalized with an asthma-related condition at least once in the three months before the project's intervention.

Private investors—including people with high net worth, banks, and foundations—will fund the pay-for-success pilot's home remediation program. Insurance companies and hospitals that benefit directly from the reduction in asthma-related emergencies are being engaged as payers.

Sutter Health Foundation has pledged to assist with community engagement and provide in-kind medical database assistance to identify children with asthma who have a history of high use of emergency care. **Third Sector Capital Partners, a national pay-for-success intermediary,** will engage with potential investors as needed. The estimated cost of the pilot intervention will be \$2,500 per child, and savings could reach \$16,585 annually for every child who avoids asthma-related emergency care.<sup>21</sup>

**INPATIENT CARE FOR THE MENTALLY ILL** Santa Clara County, California, is preparing a request for proposals for a pay-for-success project that will reduce the need for inpatient acute mental illness care at the Valley Medical Center and improve outcomes for the county's population with acute mental illnesses (Greta Hansen, lead deputy county counsel, Office of the County Counsel, County of Santa Clara, interview, June 20, 2014). In fiscal year 2012, 1,587 adults were discharged after receiving inpatient acute mental illness care at the county's acute inpatient psychiatric unit. Collectively, these patients accounted for over 16,727 bed days, at an average daily cost of \$2,017 (Martha Paine, director, General Fund Financial Services, Santa Clara Valley Health and Hospital System, personal communication, June 23, 2014).

Alternatives to inpatient care that may be selected for pay-for-success funding could include full-service partnerships (a type of managed care), therapeutic community-based services, and several other types and combinations of managed care. Third Sector Capital Partners is providing consulting services (Alice Yu, associate, Third Sector Capital Partners, personal communication, June 23, 2014).

### TEEN PREGNANCY AND MATERNAL EDUCATION

The District of Columbia is using pay-for-success to reduce teen pregnancy and improve maternal education outcomes. The District's teen pregnancy rate is high: 54.5 pregnancies per thousand girls ages 15–19 in 2011, compared to 34.2 nationally.<sup>22</sup> Infants born to teen mothers are more likely than those born to adult mothers to face an array of developmental challenges. Teen mothers are also significantly less likely to earn a high school diploma and more likely to live in poverty than adult mothers are. Nationally, these challenges cost on average \$1,445 annually per teen mother, including public as-

# 20+

#### Jurisdictions

Over 20 jurisdictions are currently engaged in pay-for-success projects around the nation.

# Many factors make it difficult to implement pay-for-success without changing existing government procurement processes.

sistance, medical care, and forgone tax revenue related to reduced productivity.<sup>23</sup>

The Teen Outreach Program of the Wyman Center, an evidence-based teen empowerment organization, has been engaged as the pay-for-success service provider and will coordinate programming designed to promote healthy choices, such as delaying pregnancy. **Social Finance US** has been selected as the intermediary to develop and launch the project.<sup>24</sup>

**TEEN PREGNANCY AND ASTHMA-RELATED EMERGENCIES** In New York State, the Montefiore Medical Center and Children's Aid Society are developing a state-sponsored pay-for-success solution to the problems of teen pregnancy and asthma-related emergencies, using enhanced school-based health centers. The program plans to serve approximately 8,500 high school students in the Bronx and on the North Shore of Staten Island.<sup>25</sup>

## Potential Future Pay-For-Success Applications

**CHILDHOOD OBESITY** The rate of childhood obesity has more than doubled since the early 1980s: 18 percent of American children were considered obese in 2012, compared to 7 percent in 1980.<sup>26</sup> Obese youth are more likely than their nonobese peers to develop prediabetes, high cholesterol and blood pressure, bone and joint problems, and sleep apnea; suffer from stigmatization and poor self-esteem; and grow up to become obese adults.<sup>27</sup>

The lifetime medical costs of an obese child are estimated to be \$12,600–\$19,000 more than those of a child of normal weight.<sup>28</sup> A pay-for-success solution that funded programs to encourage healthy eating habits and regular exercise could reduce both the rate of childhood obesity and future remediation costs within

the health care system.

**HEPATITIS C TRANSMISSION** Hepatitis C, a serious liver disease caused by the hepatitis C virus, is the most common bloodborne infection in the United States.<sup>29</sup> Nearly 15,000 Americans die every year from hepatitis C.<sup>29</sup> According to the Centers for Disease Control and Prevention, the virus “is most efficiently transmitted through large or repeated percutaneous exposure to infected blood (e.g., through transfusion of blood from unscreened donors or through use of injecting drugs).” An estimated 3.2 million people in the United States suffered from chronic hepatitis C in 2014.<sup>29</sup>

Medical treatments for hepatitis C exist, but most are expensive. For example, Sovoldi, a hepatitis C drug approved by the Food and Drug Administration in December 2013, costs \$84,000 per treatment.<sup>30</sup> Nonmedical approaches, such as the evidence-based social and behavioral “staying safe intervention,” could be funded through pay-for-success to reduce the rate of transmission and avoid the need for expensive medical treatment.<sup>31</sup>

**POOR HEALTH CAUSED BY CHRONIC HOMELESSNESS** According to the United States Interagency Council on Homelessness, nearly 100,000 people were homeless on any given night in 2012. People who are chronically homeless experience a number of health issues—including mental health and substance abuse problems—that lead to frequent inpatient hospitalizations and use of emergency care, sobering-up centers, and nursing homes.<sup>32</sup>

Service-enriched housing has proved to be a very effective alternative to these expensive care options. Consider Bud Clark Commons, a full-spectrum service-enriched housing complex in Portland, Oregon. According to an analysis by the Center for Outcomes Research and Education, tenants at Bud Clark Commons experience, on average, a threefold decrease in hospitalizations after two years of residency.

Moreover, annual health care savings attributable to the complex are substantial: \$13,284 per tenant—which is nearly \$1,700 more than the cost of providing each resident with supportive housing.<sup>33</sup> A pay-for-success solution that used health savings to shelter chronically homeless people could improve their health while reducing their use of expensive care.

## Pay-For-Success Challenges And Policy Prescriptions

**PUBLIC BUDGET SILOS** Cost savings that are realized by multiple levels of government can be a significant challenge to outcomes-based payment structures such as pay-for-success. Consid-

er the Nurse-Family Partnership pay-for-success project currently being planned in South Carolina.<sup>16</sup> The Institute for Child Success estimates that a successful Nurse-Family Partnership intervention would avoid \$19,120 in government spending per family served during the eighteen years following the intervention. But of these savings, 64 percent would be realized by Medicaid, with the remainder realized by a variety of other government agencies and programs that include the Supplemental Nutrition Assistance Program, or SNAP (formerly known as food stamps), Temporary Assistance for Needy Families, the criminal justice system, child protective services, and special education.<sup>15</sup> This makes it difficult to identify a dedicated payer for success.

Fortunately, there may be a simple policy solution: using public-private structures as payers that are capable of absorbing diffuse benefits through a global budgeting process. New models such as Ohio's accountable care communities and Oregon's coordinated care organizations are designed to contain spending and improve patient outcomes through better coordination among providers, medical and nonmedical alike.<sup>34</sup> In concept, these structures could more easily contract with service providers such as Nurse-Family Partnership that produce cost savings that would otherwise be realized by multiple agencies.

**GOVERNMENT PROCUREMENT AND APPROPRIATIONS RISK** Many factors, including annual budgeting requirements and rules governing public contracts, make it difficult to implement pay-for-success without changing existing government procurement processes.<sup>35</sup> This has led some governments to pursue a pay-as-they-go strategy of appropriating funds annually to mimic a traditional procurement contract.<sup>36</sup> This solves the short-term procurement policy challenge, but it introduces significant appropriation risk. Few investors will participate in pay-for-success if they cannot be certain that the contracted government agency will release the promised funds at the end of a multiyear contracted period.

A more promising approach would be to guarantee payment based on the full faith and credit of the contracting government. This is what the Commonwealth of Massachusetts did to secure investment in its recent seven-year-long pay-for-success project that targeted young men at risk of incarceration and joblessness.<sup>37</sup>

**UNRELIABLE, UNAVAILABLE, OR INACCESSIBLE DATA** Reliable performance data on nonmedical providers can be difficult to obtain.<sup>38</sup> This limits the number of providers that are available to participate in pay-for-success projects. In the

## Instead of paying to treat disease, payers could actually buy better health by adopting pay-for-success.

long run, more consistent evidence-based evaluations of these providers are crucial to building the field. In the short run, however, more can be done with the data—especially government data—that are already being collected.

High users of government services touch many agencies, as “Million-Dollar” Murray Barr (famously profiled in the *New Yorker* for the sizable criminal justice and health care expenses he incurred) did before his tragic death after years of substance abuse and homelessness.<sup>39</sup> Tracking frequent service users like Barr is difficult, however, and can require the bridging of distinct data systems—such as those tracking eligibility for and use of health care, behavioral health care (including mental health and substance abuse care), and social services—which are often housed separately.<sup>40</sup>

Connecting these systems to create a whole-person health composite can reveal hidden information about users of government services. For example, a pay-for-success project under development in Cleveland recently underwent a feasibility study that connected three government data sources: child welfare information from Ohio's Statewide Automated Child Welfare Information System, homelessness information from Cuyahoga County's homelessness management information system, and data from the county jail. Bridging these three systems revealed, for the first time, that children of homeless mothers spend an average of 30 percent more time in foster care than do children in families that are not homeless (Caroline Whistler, partner, Third Sector Capital Partners, personal communication, August 14, 2014).

More widespread sharing of data, as was done in Ohio, would allow more service providers engaged in pay-for-success contracts to track their progress, operate across multiple service areas, and build an evidence base for their programs' effectiveness.

## Conclusion

Over twenty jurisdictions are currently engaged in pay-for-success projects, having passed enabling legislation, started contract negotiations, or released a request for proposals or information (Whistler, interview, August 12, 2014). Bipartisan pay-for-success bills have been introduced in both houses of Congress. And the White House has called for pay-for-success initiatives in the Departments of Treasury, Labor, Housing and Urban Development, Justice, and Education, as well as in the Corporation for National and Community Service—initiatives that total \$382 million in fiscal year 2015 (Gary Glickman, senior policy adviser, Department of the Treasury, personal communication, June 24, 2014).

Some of this progress will increase investment in upstream nonmedical determinants of health, which is welcome. But the long-term implication may be more interesting: the seeding of a new market that values health, not just health care. Instead of paying to treat disease, government

agencies, health care systems, and insurance companies could actually buy better health by adopting pay-for-success.

Consider the possibilities. Community organizations addressing the nonmedical determinants of health could, for the first time, compete directly with health care providers to keep people healthy. The Centers for Medicare and Medicaid Services could buy service-enriched housing as a cost-effective alternative to treating exposure and substance abuse. A hospital could pay for healthy food to be delivered to patients' homes instead of for costly obesity and diabetes treatments. Even insurance companies could participate, opting to reimburse fitness bands, which encourage exercise, as readily as glucose monitors, for example.

All of these options and many others would be available in a market that valued health. Pay-for-success is a new mechanism that could help make that market possible. ■

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